CLAIMS

What is claimed is:

1. A steering wheel tilt mechanism comprising:

a first steering column section;

a second steering column section pivotally coupled to the first steering column section;

a lock assembly selectively restricting pivotal movement of the first steering column section relative to the second steering column section, wherein the lock assembly includes:

a housing;

a shaft having a longitudinal axis, one end coupled to the first steering column section and a second end slidingly positioned within the housing, wherein the shaft includes a portion having external form;

a substantially cylindrical cam roller pivotally coupled to the housing, the cam roller having a pivot axis substantially parallel to the longitudinal axis of the shaft and offset from a longitudinal centerline of the cam roller, wherein the cam roller includes an external form selectively engageable with the external form of the shaft to selectively restrict pivotal movement of the first steering column section relative to the second steering column section.

2. The steering wheel tilt mechanism of claim 1 wherein the external form of the cam roller is biasedly engaged with the external form of the shaft.

3. The steering wheel tilt mechanism of claim 2 further including a spring clip coupled to the housing, the spring clip including a portion biasing the cam roller into engagement with the shaft.

4. The steering wheel tilt mechanism of claim 1 wherein the shaft includes a slot having a predetermined width and the tilt mechanism further includes a stop fixed to the housing and positioned within the slot, a clearance between the slot and the stop defining a maximum amount of travel available to the shaft.

5. The steering wheel tilt mechanism of claim 1 wherein the housing includes a stepped bore to limit the travel of the shaft.

6. The steering wheel tilt mechanism of claim 5 further including a stop fixed to the housing, the stop being positioned to limit the axial travel of the shaft along the longitudinal axis.

7. The steering wheel tilt mechanism of claim 1 wherein the external form on the shaft is a helical thread.

8. The steering wheel tilt mechanism of claim 7 wherein the external form on the cam roller is a helical thread.

9. The steering wheel tilt mechanism of claim 8 wherein the helical threads of the shaft and the cam roller have the same pitch and hand.

10. The steering wheel tilt mechanism of claim 1 wherein a longitudinal centerline of the cam roller and the longitudinal centerline of the shaft are aligned along a plane rotated an angle ranging from ten to thirty degrees from a vertical plane extending through the shaft longitudinal centerline.

11. The steering wheel tilt mechanism of claim 10 wherein the pivot axis of the cam roller is positioned within the angle.

12. The steering wheel tilt mechanism of claim 1 wherein the cam roller is restricted from moving axially along the pivot axis.

13. The steering wheel tilt mechanism of claim 12 wherein the housing includes a pocket for limiting the axial movement of the cam roller.

14. The steering wheel tilt mechanism of claim 12 further including a pin rotatably coupling the cam roller and the housing, the pin including a shoulder selectively engageable with the cam roller to limit the axial travel of the cam roller relative to the housing.

15. A method of angularly positioning a steering wheel relative to a steering column, the steering column having a first section and a second section pivotally coupled to one another, a lock assembly having a housing, a shaft and a cam roller interconnects the first and second sections, the method comprising the steps of:

moving the cam roller to a position disengaged from the shaft;

moving the steering wheel to a desired rotational position;

rotating the first section relative to the second section;

axially sliding the shaft within the housing; and

moving the cam roller to a position engaged with the shaft to restrict axial movement of the shaft and fix the rotational position of the steering wheel.

16. The method of claim 15 further including selectively engaging an outer form of the cam roller with an outer form of the shaft to restrict axial movement of the shaft.

17. The method of claim 16 wherein the outer form of the cam roller is a helical thread.

18. The method of claim 15 further including restricting the distance the shaft is allowed to axially move when the cam roller is disengaged from the shaft.

19. The method of claim 15 further including positioning a pivot axis of the cam roller substantially parallel to a longitudinal axis of the shaft and offset from a longitudinal centerline of the cam roller.

20. The method of claim 15 further including moving a lever coupled to the cam roller to cause the cam roller to move between engaged and disengaged positions with the shaft.

21. The method of claim 15 further including biasing the cam roller toward the position engaged with the shaft.

22. The method of claim 15 further including limiting the axial travel of the cam roller relative to the housing.

23. The method of claim 22 further including engaging a pin with the cam roller to limit the axial travel of the cam roller relative to the housing.